

Utah Department of Transportation



**Supplemental Specifications
for**

**2004 Standard
Specifications**

**FOR ROAD AND BRIDGE
CONSTRUCTION**

U.S. Standard Units (Inch-Pound Units)

Issued July 13, 2004

Memorandum

UTAH DEPARTMENT OF TRANSPORTATION

DATE: Jul 13, 2004

TO: Holders of Hard Copy of Standard Specifications

FROM: Barry Axelrod, CDT
Standards and Specifications

SUBJECT: Supplemental Specifications Distribution, dated July 13, 2004

Applicable files for the change are attached. Maintain these files as a supplemental update to the UDOT Standard Specifications dated March 15, 2004. No pages are to be removed or replaced in the basic book, electronic or hard copy.

If you are in need of electronic copies of any Standard or Supplemental Specification please refer to the Standards and Specifications Web site at <http://www.udot.utah.gov/index.php?m=c&tid=302>. From there select the **2004 Standards** subtopic.

If you have any questions or problems with the electronic files contact me at 801-964-4570 or by email at baxelrod@utah.gov.

Attachments

Listing of Supplemental Specifications

Issue Date: May 27, 2004

Revised April 29, 2004

- Section 01554M Article 3.2 A1b (deleted)
- Section 01721 Entire section revised to correct oversight. Article 3.5 H (added).
Replaces Standard Specification.
- Section 02822M Article 2.4 B (revised)
- Section 13551 Entire section revised. Replaces Standard Specification.
- Section 13552 Entire section revised. Replaces Standard Specification.
- Section 13553 Entire section revised. Replaces Standard Specification.
- Section 13554 Entire section revised. Replaces Standard Specification.
- Section 13555 Entire section revised. Replaces Standard Specification.
- Section 13556 Entire section revised. Replaces Standard Specification.
- Section 13557 Entire section revised. Replaces Standard Specification.
- Section 13561 New section added.
- Section 13591 Entire section revised. Replaces Standard Specification.
- Section 13592 Entire section revised. Replaces Standard Specification.
- Section 13593 Entire section revised. Replaces Standard Specification.
- Section 13594 Entire section revised. Replaces Standard Specification.
- Section 13595 New section added.

Issue Date: July 13, 2004

Revised June 24, 2004

- Section 02751 New section added.
- Section 02961M Articles 1.2, 2.1, and 3.1 (revised)
- Section 02963M Articles 1.2 and 2.1 (revised)
- Section 02968 Section deleted
- Section 02981 New section added.

**Supplemental Specification
2004 Standard Specification Book**

SECTION 02751

PARTIAL DEPTH REPAIR FOR CONCRETE PAVEMENTS

Add Section 02751:

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Remove spalled or delaminated concrete in the upper one-third to one-half of the pavement; clean, maintain, and prepare joints; furnish, place and cure patch material.

1.2 RELATED SECTIONS

- A. Section 03055: Portland Cement Concrete
- B. Section 03390: Concrete Curing

1.3 REFERENCES

- A. ASTM D 3405: Joint Sealants, Hot-Applied, for Concrete and Asphalt Pavements

PART 2 PRODUCTS

2.1 PARTIAL DEPTH CONCRETE PAVEMENT REPAIR MATERIAL

- A. As per Section 03055 with the following changes:
 - 1. Patching Material - Use an approved product from the UDOT Performance Data Products Listing or Portland Cement Concrete, according to manufactures recommendation.
 - 2. Use of High Range Water Reducers is acceptable (Super-Plasticizers).
 - 3. Adjust mix design to meet project scope and limitation of operations.
 - 4. Submit trial batch data to Engineer and Region Materials Lab. Trial batch data evaluated and accepted or rejected by the Engineer.
 - 5. Have mix design representative on site for placement.

6. Provide concrete mix design for verification as per Section 03055.

2.2 CONCRETE CURING SEALING COMPOUND

- A. Refer to Section 03390.

PART 3 EXECUTION

3.1 REMOVE SPALLED OR DELAMINATED CONCRETE

- A. Complete removal with concrete saws and 30 pound class or smaller hand jackhammers.
- B. Establish rectangular or circular sections, extending at least 2 inches beyond a spalled area, or 6 inches beyond the failed area determined by sounding. Provide vertical perimeter saw cuts of 2-inch minimum depth. Maintain uniform depth of the repair area.
- C. Repair any damage caused by the operation at the Contractor's expense.
- D. If, in the removal process, the actual spalled/delaminated area is determined to extend beyond what the Department initially marked, the Department's representative will remark the area. Removal and repair of any such extended areas will be paid under the Contractor's unit bid price for Partial Depth Slab Repair.

3.2 CLEAN ALL EXPOSED SURFACES

- A. Remove all loose particles, oil, dusts, traces of asphalt concrete, or other contaminants. Use sandblasting or waterblasting (Minimum 2000 psi).
- B. Remove all cleaning grit prior to placement.
- C. Oil sprayed by air blowing equipment is prohibited.
- D. Sandblast clean or remove partially exposed reinforcing steel prior to placing the patch material.

3.3 PREPARE EXISTING JOINTS FOR PLACEMENT

- A. Maintain Existing Joints: Maintain a width equal to the opening in all working joints and cracks within or adjacent to the patch by, inserting a removable material (i.e. cardboard, polyfoam, fiberboard, etc.), before placing the mix. Use a material of uniform size and thickness.
- B. Place the material 1 inch below and 3 inches laterally beyond the patch boundary. Do not widen the existing joint to provide for, or facilitate placement of, the removable joint forming material.

3.4 CONCRETE PLACEMENT

- A. Use mixes that have been approved by the Engineer.
- B. Finish the patch surface to within 1/8 inch of the existing pavement.
- C. Do not place prior to having a manufacturer representative on site. Manufacturer will address the following requirements;
 - 1. On site mixing permissibility and constraints.
 - 2. Surface preparation of the repair area and appropriate bonding agent.
 - 3. Consolidation requirements.
 - 4. Pot life of mix.
 - 5. Environmental conditions and limitations.

3.5 CONCRETE FINISHING

- A. Finish from the center of the repair toward the boundaries.

3.6 CONCRETE CURING AND PROTECTION

- A. Cure the patched surface immediately after finishing operations with the material meeting Section 03390 with the following change;
 - 1. Uniformly spray the surface at a rate of 50 ft²/gallon.
- B. When temperatures fall below 50 degrees F, follow manufactures representative recommendations for cold weather curing and protection.
- C. Maintain mix temperature during curing period to coincide with trial batches or as required by manufacturer.

- D. Do not open to traffic until specified strength has been reached by testing performed by the Department.
- E. Protect the individual placements with an approved traffic control device.
- F. Remove and replace, to the Engineer's satisfaction, at no expense to the Department, any patches that are rejected before substantial completion, due to the following:
 - 1. Failures due to cracking (any visible crack), shrinkage (breaking of bond between patch and pavement), or pop-outs (pieces of pavement broken loose from surface greater than ½ inch diameter).
 - 2. Unsatisfactory or improper workmanship by the Contractor, including patches with surface profiles that vary from the existing roadway profile by more than 1/8 inch. Patches with a profile higher than 1/8 inch from the existing roadway profile may be ground to meet existing profile in lieu of removal and replacement.
 - 3. Failures due to damage by the operation or public traffic.
- G. Fill overcuts flush to the pavement surface with an approved repair epoxy on the UDOT Performance Data Products Listing.
- H. Remove joint forming material and fill all affected joints with hot pour (ASTM D 3405) material.

3.7 CLEANING PAVEMENT

- A. Sweep roadway and shoulders of all debris prior to opening to traffic. Prevent damage to the patches from cleaning equipment.

END OF SECTION

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SECTION 02961M

ROTOMILLING

Delete Article 1.2 and replace with the following:

1.2 RELATED SECTIONS

- A. Section 01355: Environmental Protection
- B. Section 02969: Optional Use of Reclaimed Asphalt Pavement (PG Grade Project Only)

Delete Article 2.1 and replace with the following:

2.1 MATERIALS

- A. Use the milled material obtained from the rotomill process passing a 2-inch sieve as optional use of Reclaimed Asphalt Pavement (RAP) following Section 02969.

Delete Article 3.1 and replace with the following:

3.1 PROCEDURE

- A. Rotomill existing bituminous pavement surface to the width and depth shown on the plans to an accuracy of $\pm 3/8$ -inch of plan depth, measured from original surface to the top of the ridge.
 - 1. Maintain depth tolerance. Do not use skis or other profile grade control devices if the specified depth tolerance cannot be met with their use.
- B. Rotomill the area directly surrounding manholes, catch basins, water meters, water valves or any other permanent fixtures to the specified depth.
- C. The Engineer:
 - 1. Measures and records rotomilling depths, taking two random measurements every 1,000 ft of each pass of the milling machine.

2. May adjust the depth of the milling operation, within tolerances, to remove unacceptable material or to improve ride.
- D. Load the reclaimed material from milling operation into a truck in one operation. Milled material is the property of the Contractor, unless specified otherwise.

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SECTION 02963M

PROFILE ROTOMILLING

Delete Article 1.2 and replace with the following:

1.2 RELATED SECTIONS

- A. Section 01355: Environmental Protection
- B. Section 02969: Optional Use of Reclaimed Asphalt Pavement (PG Grade Project Only)

Delete Article 2.1 and replace with the following:

2.1 MATERIALS

- A. Use the milled material obtained from the rotomill process passing a 2 inch sieve as optional use of Reclaimed Asphalt Pavement (RAP) following Section 02969.

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SECTION 02968

OPTIONAL USE OF RECLAIMED ASPHALT PAVEMENT

Delete Section 02968 in its entirety.

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SECTION 02981

GRINDING PAVEMENT

Add Section 02981:

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Procedure for grinding existing concrete pavements.

1.2 RELATED SECTIONS

- A. Section 01452: Smoothness

PART 2 PRODUCTS

2.1 EQUIPMENT

- A. Provide and operate equipment utilizing diamond blades mounted on a self-propelled machine designed for grinding and texturing pavement.
- B. Do not use equipment that will causes damage to the transverse or longitudinal joints.
- C. Use vacuuming equipment necessary to remove residue and excess water.

PART 3 EXECUTION

3.1 GRINDING

- A. Grind until the surface of both sides of the transverse joints and cracks are in the same plane and meet the smoothness required.
- B. Provide a uniform finished texture.
- C. Perform grinding in a longitudinal direction. Begin and end grinding at lines normal to the pavement centerline.
- D. Do not cause damage to the underlying surface of the pavement.
- E. Provide resultant surface in a parallel, corrugated type texture consisting of grooves between 0.090 and 0.150 inches wide. Use a distance between the grooves of between 0.060 and 0.13 inches. Make peaks of the ridges approximately 1/16 inch higher than the bottom of the grooves. Maintain cross slope drainage.
- F. Provide uniform transverse slope of the pavement with no depressions or misalignment of slope greater than ¼ inch in 10 feet when tested with a 10-foot straightedge.
- G. Do not grind structures.
- H. All residue from the grinding process becomes property and responsibility of the contractor.

3.2 SMOOTHNESS TESTS

- A. Determine pavement smoothness according to Section 01452, with the following change;
 - 1. Provide finished pavement surface with an average profile index not greater than ½ inch per mile.

END OF SECTION